VIRGINIA'S NONPOINT SOURCE MANAGEMENT PROGRAM BACKGROUND

THE CLEAN WATER ACT

The Clean Water Act of 1987, Section 319, required states to assess their state waters and identify those that are adversely affected by nonpoint sources (NPS) of pollution. In addition, identification of state management programs to control NPS pollution was required. The three key components of the Clean water Act are:

- NPS assessment reporting
- NPS program funding
- NPS program development and implementation

Nonpoint Source Assessment Report

As required by the Clean Water Act, the Department of Conservation and Recreation (DCR) completed Virginia's first NPS pollution assessment in 1988, with subsequent updates and refinements in 1993 and 1996. The assessment ranks the state's 494 hydrologic units for potential NPS pollution, based on land use, livestock population, forest harvesting, disturbed urban acreage, best management practices (BMPs) implementation and erosion rates. The rankings are used to direct the implementation of Virginia's NPS pollution control programs, as well as cost-share and Section 319 funding, to the highest priority watersheds (watersheds with greatest pollution potential).

NPS Management Program Funding

Pursuant to Section 319 of the Clean Water Act, Virginia is awarded grant funds to implement NPS programs. DCR administers Section 319 funding, in coordination with the Nonpoint Source Advisory Committee (NPSAC), for watershed projects, demonstration and educational programs, NPS pollution control program development, and technical and program staff. DCR reports annually to the United States Environmental Protection Agency (EPA) on the progress made in NPS pollution prevention and control. DCR also administers EPA grant funds provided through the Chesapeake Bay Program for the implementation of nonpoint source projects within the Chesapeake Bay drainage basin.

Section 319 of the Clean Water Act of 1987 authorized specific funding for implementation of state management programs. The Clean Water Action Plan provides for additional funding for states that achieve "enhanced benefits" status. This is accomplished through development of Unified Watershed Assessments, Watershed Restoration Action Strategies and program updates. Completion and approval of these activities could result in a substantial increase in funding from the current $2 million to $4 million.

In addition, Virginia has received Chesapeake Bay Implementation Grant funding since 1986. Current funding for this program is approximately $2.5 million

from EPA under Section 117 of the Clean Water Act. These funds are specifically authorized for implementation activities related to the Chesapeake Bay drainage basin. This drainage basin covers approximately 60 percent of Virginia. These funds have been mainly used to support agricultural nonpoint source programs.

Another major source of funding for implementation of this management program has been the state legislature. In 1997 the Virginia General Assembly enacted the Water Quality Improvement Act. This legislation authorized substantial funding for the Water Quality Improvement Fund. With strong support from Virginia's Executive Branch, a total of approximately $31 million has been appropriated for nonpoint source pollution control activities through fiscal year 2000.

Many other sources of funding exist and are being utilized to implement portions of this management program. Sources of funding for each section of this program are identified within the chapters of this document. Beyond the additional funds being provided for implementation activities, the total funding for nonpoint source programs in Virginia includes a portion of each agency's operating budget for nonpoint source pollution control implementation.

As the lead agency in Virginia for NPS pollution control programs, DCR also coordinates other nonpoint source initiatives, such as the Chesapeake Bay Program and the Coastal Nonpoint Source Pollution Control Program.

CLEAN WATER ACT AMENDMENTS

In 1987, Congress enacted section 319 of the Clean Water Act. Section 319 establishes a national program to control nonpoint sources of water pollution. Nonpoint source pollution is caused by rainfall or snowmelt moving over and through the ground carrying pollutants to surface and ground waters. Atmospheric deposition and hydrologic modification also contribute to nonpoint source pollution.

Under section 319, states address nonpoint source pollution by developing NPS assessment reports that identify NPS pollution problems and the nonpoint sources responsible for the water quality problems. States also adopt management programs to control NPS pollution and then implement the management programs. Section 319(h) provides for EPA's award of grants to states to help them to implement those management programs. Both the assessment report and management program must be approved by EPA in order for a state to be eligible for section 319(h) funds.

Nonpoint source pollution management programs are required to meet the statutory requirements of the Clean Water Act Amendments and should address additional requirements resulting from future EPA program guidance.

CLEAN WATER ACTION PLAN

The Clean Water Action Plan (CWAP) was released in February 1998 to provide a blueprint for restoring and protecting the nation's water resources. As stated in the document, "A key element in the Action Plan is a new cooperative approach to watershed protection in which state, tribal, federal, and local governments, and the public first identify the watersheds with the most critical water quality problems and then work together to focus resources and implement effective strategies to solve those problems. The Action Plan also includes new initiatives to reduce public health threats, improve the stewardship of natural resources, strengthen polluted runoff controls, and make water quality information more accessible to the public."

To support implementation of CWAP, additional money is available from EPA for the Section 319 NPS management program. This additional money is referred to as "enhanced'"program funding and is in addition to what Virginia normally receives for the management program. In order to receive this additional money a state must first achieve "Enhanced Benefits Status." This is accomplished by updating the statewide NPS Management Program to address the nine key elements (described in the Federal Guidance chapter of this document) for all significant nonpoint

sources of pollution.

The incremental funding is intended to focus on watershed restoration action strategies for Category I waters which were identified through the Unified Watershed Assessment and Restoration Priorities process. Virginia completed its assessment in 1998. There are four assessment categories as described below:

- Category I - Watersheds in need of restoration. Watersheds that do not now meet, or face imminent threat of not meeting clean water and other natural resource goals.

- Category II - Watersheds meeting goals, including those needing action to sustain water quality. These watersheds meet clean water and other natural resource goals and standards, and support healthy aquatic systems.

- Category III - Watersheds with pristine/sensitive aquatic system conditions on lands administered by federal, state, or tribal governments. These areas include currently designated and potential Wilderness Areas, Outstanding Natural Resource Waters, and Wild and Scenic Rivers.

- Category IV - Watersheds with insufficient data to make an assessment. These watersheds lack significant information, critical data elements, or the data density needed to make a reasonable assessment at this time.

Watersheds within Virginia were classified either as Category I or Category II waters. Of the state's 48 watersheds presented in the assessment, 39 were classified as Category I and 9 were classified as Category II. Based on the assessment methodology no watersheds were classified as Category III or Category IV.

Pursuant to the Clean Water Action Plan, guidelines were provided for fiscal year (FY) 1999 Section 319 funding. These guidelines apply to the award and use of any Section 319 funds that are appropriated by the U.S. Congress in excess of $100 million originally authorized by Congress. In the discussion below, the funds exceeding $100 million are referred to as "incremental Section 319 grant funds."

- Allocation Formula: EPA will use the existing Section 319 allocation formula to initially allocate any incremental Section 319 grant funds to states, territories and tribes. These initial allocations may be modified as explained in the following paragraph.

- Completion of Unified Watershed Assessments and Watershed Restoration Priorities: The incremental Section 319 grant funds are being provided to help states, territories and their partners implement Watershed Restoration Action Strategies for watersheds identified in Unified Watershed Assessments. Therefore, incremental grant funds will be allocated only to states and territories that have completed their Unified Watershed Assessments and their Watershed Restoration Priorities by October 1, 1998. If any state or territory has failed to complete its Unified Watershed Assessment and Watershed Restoration Priorities by that date, EPA will distribute its allocation to all other states and territories that have completed their Unified Watershed Assessments and Watershed Restoration Priorities in accordance with the Section 319 allocation formula.

- Use of Incremental Funding: Incremental Section 319 funds are subject to the same eligibility criteria and requirements as all other Section 319 funds. Thus states must meet for these funds the basic legal and program requirements that are set forth in Section 319 and in the May 1996 Nonpoint Source Program and Grants Guidance with regard to all Section 319 grants.

- Updating and Refining Nonpoint Source Programs and Assessments: Beginning in FY 1999, states and territories are authorized to use up to 20 percent of their entire Section 319 allocation to upgrade and refine their nonpoint source programs and assessments. States and territories may use these funds for any of the broad set of assessments and program development purposes outlined in detail on page 21 of the May 1996 guidance except that the incremental portion of this 20 percent (i.e., 20

percent of the appropriations that exceed the base allocation of $100 million) must be focused particularly on activities that will assist in the implementation of Watershed Restoration Action Strategies. A prominent example of such activities is the development of total maximum daily loads (TMDLs) to help implement a Watershed Restoration Action Strategy.

CHESAPEAKE BAY PROGRAM

The federal Chesapeake Bay Program is another vital component of Virginia's Nonpoint Source Pollution Management Program. As the designated lead nonpoint source pollution control agency, the Virginia Department of Conservation and Recreation has a key role in implementing Virginia's Chesapeake Bay Program. This is accomplished in several ways, including participating in committees and workgroups of the Chesapeake Bay Program in Annapolis, Md., and developing nonpoint source pollution implementation alternatives for Virginia's Chesapeake Bay tributaries.

As part of Virginia's efforts to help achieve the nutrient reduction goals for the Chesapeake Bay, nutrient reduction strategies are being developed for each of Virginia's Chesapeake Bay tributaries. DCR, working in cooperation with the Virginia Department of Environmental Quality and the Chesapeake Bay Local Assistance Department, is the lead agency for developing the nonpoint source portion of Virginia's Tributary Strategies.

DCR also administers the Bay Program NPS pollution implementation grant. Virginia receives approximately $2.5 million in federal funding for the agricultural cost-share program, for NPS program implementation efforts within the Chesapeake Bay watershed and for soil and water conservation districts for program implementation. These elements are all part of the larger effort dedicated to nonpoint source pollution program activities statewide.

Chesapeake Bay Agreement

The Chesapeake Bay Program is the unique regional partnership responsible for directing and conducting the restoration of the Chesapeake Bay since the signing of the historic 1983 Chesapeake Bay Agreement. The Chesapeake Bay Program partners include the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the Environmental Protection Agency, representing the federal government; and participating advisory groups.

As the largest estuary in the United States and one of the most productive in the world, the Chesapeake was this nation's first estuary targeted for restoration and protection. In the late 1970s, scientific and estuarine research on the bay pinpointed three areas requiring immediate attention: nutrient over-enrichment, dwindling underwater bay grasses and toxic pollution. Once the initial research was completed, the Bay Program evolved as the means to restore this exceptionally valuable resource.

Since its inception in 1983, the Chesapeake Bay Program's highest priority has been the restoration of the bay's living resources - its fin fish, shellfish, Chesapeake Bay grasses, and other aquatic life and wildlife. Improvements include fisheries and habitat restoration, recovery of Chesapeake Bay grasses, nutrient and toxic reductions, and significant advances in estuarine science.

Examples of specific actions initiated by the Chesapeake Bay Program include a watershed-wide phosphate detergent ban, the introduction of agricultural best management practices, Biological Nutrient Removal at wastewater plants, and a public education campaign emphasizing the role each of the watershed's 15 million residents play in the restoration.

Considered a national and international model for estuarine research and restoration programs, the Bay Program is a partnership led by the Chesapeake Executive Council. The members of the Executive Council are the governors of Maryland, Virginia and Pennsylvania; the mayor of the District of Columbia; the administrator of the EPA and the chairman of the Chesapeake Bay Commission. The Executive Council meets annually to establish the policy direction for the bay and its living resources.

In 1987, Virginia joined the other Chesapeake Bay Program participants in committing to reduce the controllable flow of nutrients in the Chesapeake Bay by 40 percent by the year 2000. Each tributary to the bay has different characteristics, so each requires site-specific, unique cleanup strategies. Virginia's strategy for the Potomac River basin is complete. Initial strategies for the James and York river basins are available, as well as a progress report on the Rappahannock River Basin Strategy. Final strategies for these three river basins and Virginia's small coastal basins will be developed once scientific studies are completed and nutrient reduction targets are set.

Tributary Strategies

Initially, tributary strategy development focused on nutrient reduction because nutrient over enrichment is one of the major threats to the health of the Chesapeake Bay and its tributary rivers. Excess nutrients in the form of nitrogen and phosphorus can lead to overproduction of algae and oxygen-starved waters as algae decompose. However, as better information became available through monitoring and modeling efforts, it became clear that excessive sediment and total suspended solids were also causing serious water quality problems. As a result, tributary strategy development in the lower bay tributaries address both nutrients and sediments.

Due their location within the Chesapeake Bay watershed, the Potomac River and other northern bay tributaries have a significant direct impact on nutrient levels within the main stem of the Chesapeake Bay. Therefore, a 40 per cent nutrient reduction goal was established for the Potomac River consistent with the overall goal for the Chesapeake Bay. No sediment goal has yet been established for the Potomac and Shenandoah rivers.

The connection between the lower Chesapeake Bay tributaries (Rappahannock, York, and James rivers) and nutrient levels in the main stem of the Chesapeake Bay is far less clear. In fact, the lower tributaries may have minimal impact on nutrient levels in the main stem of the bay. As a result, nutrient reduction goals for the lower tributaries will be based on what is needed to restore and maintain the health of each individual river. Each tributary is unique and has different water quality needs.

Also, the desired and actual use of each tributary varies significantly. Therefore, different solutions will be required to target the unique needs of each tributary. By targeting local issues and concerns, tributary strategies can be developed that are cost-effective, equitable and practical.

The Tributary Strategy process is intended to address both nonpoint and point sources of pollution. Through an assessment process, existing efforts to control nonpoint and point sources of pollution will be evaluated and opportunities for achieving additional nutrient or sediment reductions will be identified.

Although the focus of each regional strategy will be on what control options are best suited for that region, the goal setting process will be basin-wide. This focus is based largely on the availability of accurate and reliable data derived from the Chesapeake Bay Watershed and Water Quality models.

A major component of the Chesapeake Bay Program has been the development of computer models that are used to help understand the water quality problems facing the Chesapeake Bay and its tributary rivers. The Watershed Model uses land use information along with monitoring information and delivery factors to help determine the relative contributions of various sources of nutrients and sediments. The Water Quality Model is a predictive model that can help determine dissolved oxygen and other water quality and living resource improvements that can be anticipated in response to nutrient and sediment reductions. In other words, it can help predict how living resources may respond to changes in water quality. This complex, three-dimensional model can simulate the chemical, physical, and biological dynamics of the Chesapeake Bay and its tributary rivers.

NONPOINT SOURCE ADVISORY COMMITTEE

To help develop and implement Virginia's Nonpoint Source Pollution Management Program, DCR coordinates the Nonpoint Source Advisory Committee (NPSAC). It comprises representatives from all state and

federal agencies having significant responsibility for NPS pollution control. The committee developed Virginia's first management program in 1988. Goals and milestones for controlling various sources of NPS pollution were updated in 1992 and 1994.

The Virginia Nonpoint Source Pollution Management Program is coordinated by the DCR as set forth in Section 10.1-104.1 of the *Code of Virginia*. This role includes the oversight of program development and implementation and interfacing with EPA to ensure that Virginia's program is in conformance with the requirements of the Clean Water Act of 1987. DCR is also responsible for the management and distribution of federal and state funds for program implementation. DCR performs these duties with the assistance and guidance of the NPSAC.

The mission of this committee is to be an interagency forum to facilitate effective implementation of nonpoint source pollution programs in Virginia, and to achieve and maintain beneficial uses of water throughout the commonwealth. NPSAC comprises representatives of the following agencies:

Chesapeake Bay Local Assistance Department
Department of Agriculture and Consumer Services
Department of Conservation and Recreation
Department of Environmental Quality
Department of Forestry
Department of Game and Inland Fisheries
Department of Health
Department of Mines, Minerals and Energy
Department of Transportation
Virginia Cooperative Extension
Virginia Marine Resources Commission
USDA Farm Services Agency
USDA Forest Service
USDA Natural Resources Conservation Service
US Fish and Wildlife Service
US Geological Survey